

Letters to the editor

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Dental implants

Potential relationship with cancer

Sir, I read with interest the article by Salgado-Peralvo *et al.* (*BDJ* 221; 10: 645–649) regarding the potential relationship between dental implants and squamous cell carcinoma.

I imagine if such a relationship exists it is less likely to be causal, but rather coincidental, but I take the point with regard to chronic inflammation having a potential for malign transformation, and to that point Albrektsson *et al.*¹ recently proposed that implants may indeed act as a foreign body, even though they appear to be accepted by the bone as a bioinert material through the process of osseointegration.

In a recent article published by me and my colleagues, oral carcinoma was proposed as a possible extrinsic pathology that might be mistaken for peri-implantitis.² This was

predicated on the relatively recent presentation of a long-standing patient who had had numerous implants at my practice over many years but had retired to Spain, where she was later diagnosed with peri-implantitis with acute abscess formation. After many weeks of antibiotics and no resolution the patient contacted me to see if she could fly back to see me. Clinical presentation was one of a firm but fragmented swelling mesio-buccal to an implant in the 36 region, with bleeding on probing at 36 and a radiographic appearance of crestal bone loss at 37 compared to baseline and consistent with a diagnosis of peri-implantitis. Given the unusual texture and visual character of the swelling suspicions were raised and a biopsy taken immediately, which subsequently revealed squamous cell carcinoma invading the mandible around both implants at 35, 36 (Figs 1–4).

The patient went on to have both implants removed and multiple extractions in the

lower left quadrant with a partial mandibulectomy and block neck dissection, followed by radiotherapy. Unfortunately, within five years the patient had succumbed to, and died from multiple metastatic disease.

The current article by Salgado-Peralvo *et al.* is a timely reminder that while rare things rarely happen – they do happen! Clinicians should always remain alert to this possibility.

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1. Albrektsson T, Dahlin C, Jemt T, Sennerby L, Turri A, Wennerberg A. Is marginal bone loss around oral implants a provoked foreign body reaction. *Clin Implant Dent Relat Res* 2014; **16**: 155–165.
2. Sarmiento H, Norton M, Fiorellini J. Development of a classification system for peri-implant diseases and conditions. *Int J Periodontics Restorative Dent* 2016; **36**: 699–705.

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Healthcare research

VR and AR

Sir, we are living in an era where virtual reality (VR) and augmented reality (AR) are increasingly being incorporated in our daily lives, in education and medical treatments.¹ It seems very appropriate to take advantage of this great opportunity in healthcare research by employing a blended virtual reality approach.

As an example, Oculus Rift, a VR goggle recently launched by a UK-based company, has several potential uses in education and training, by artificially recreating our real life by giving a 4-dimensional experience to the user. AR takes this experience even further by overlaying a virtual environment onto an existing reality. Pokeman Go, a location-based AR game, overtook long established social networking apps such as Twitter and Facebook after only a few weeks.²

These fascinating technologies are increasingly being used in gaming and more recently in education, including medical education.³ VR and AR can also be used in healthcare research, for training participants



Fig. 1 Appearance of solid tumour, misdiagnosed as a chronic abscess



Fig. 2 Baseline radiograph showing good marginal bone levels



Fig. 3 Follow-up radiograph demonstrating marginal bone loss



Fig. 4 Infra-bony defects consistent in appearance with peri-implantitis